PacketBand TDM-4 ET Quickstart Guide V1.1

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1. Introduction

This document is a basic guide for configuring a new Patapsco PacketBand TDM-4 ET. A full User Manual for configuring all settings on the unit is supplied on the DbManager Installation Disk. Patapsco offers an optional Pre-Configuration Service and optional Telephone Support Agreements at minimal cost. Information on these options can be found in the Support document on the DbManager installation disk.

1.1. Transition Networks - Patapsco

Patapsco PacketBand products allow the delivery of synchronous ISDN, TDM, V.11 (X.21) and V.35 data streams across asynchronous IP networks. The product range covers both switched ISDN applications and unswitched 'nailed' circuits. PacketBand will packetize traffic for transport across the IP network and transparently depacketize it at a remote site. The traffic will then be played out to the data interfaces. PacketBand must be used as a two-ended solution, and an existing system can easily be expanded with more PacketBand units to allow links to new sites and devices. The Extended Temperature (ET) products offer the same feature set, but with fans and enhanced power supplies to offer extra resilience sites where ambient temperatures surrounding the PacketBand exceed 50°C.

1.2. Safety warnings

Caution: Danger of electric shock. The device may be connected to mains voltages. Switch to power-off state before working on the device.

Caution: Danger of electrostatic discharge. Electronic components are sensitive to electrostatic discharges that might damage the device. Protect the device from electrostatic discharges by wearing an electrostatic wristband.

Caution: Interruption of data transmission. Data transmission will be interrupted during any work on the transmission line and/or deactivation of the power supply. Make sure that that any work will only be carried out on inactive lines (without data transmission) or during quiet times to reduce interference to live systems.

Caution: Danger of damage to devices or service interruption. Access by unauthorized third persons may cause damage to devices and/or interrupt services. Make sure that subracks are only installed in lockable locations.

Caution: Danger of overvoltage. During faults, dangerous unprotected voltages may be present. Ensure sufficient grounding of the housings, i.e. by connecting the grounding contact.

- Safety requirements are not fulfilled unless this equipment is connected to a wall socket outlet with a protective earth (PE) contact.
- The power cord used to connect this equipment must be HAR marked and fitted with an IEC320 connector and an ASTA approved moulded plug.
- There are no user serviceable parts in this equipment. All servicing and repair tasks must be undertaken by qualified service personnel.
- Isolation from mains power is achieved by the removal of the main power cord.

2. Getting Started

This section will describe how to make the physical connections between PacketBand TDM-4 ET and the other system devices, and install the Patapsco management application, DbManager.

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2.1. Rack Mounting Instructions

The Rack Mounting Kit is comprised of the following:

Photo	Description	Quantity
	L-Bracket	2
	Long Patapsco case screw	4
	Cage Nut	4
	washer	4
	Rack Mount Screw	4

All Patapsco units can be mounted in a standard 19" rack housing. To allow units to fit into a 19" rack, a Rack Mounting Kit must be purchased for the unit (s). There are various rack mounting options depending on the size of the unit ordered. The following guide will explain how to use the Rack Mounting Kit with Patapsco units.

1. Remove the four short screws near the front or rear panel on the left and right hand sides of the Patapsco unit. The unit can be mounted with the front panel facing forward or with the ports facing forward as required.

2. Fit one of the **L-Brackets** to the side of the unit. The four small fixing holes allow the unit to protrude forward or sit further back depending on the desired position of the unit. The bracket may also face forwards or backwards depending on the desired position of the unit.

3. Fix the **L-Bracket** in place using the **Long Patapsco case screws**.

4. Fix the second **L-Bracket** to the other side of the case in the same way.

5. Put the **Rack Mount screws** through the **Rack Mount washers**.

6. Offer the unit up to the rack and fix it in place using the **Rack Mount Screws** and **Rack Mount cage nuts**.

2.2. Accessories

The following accessories are supplied with all Patapsco units:

Item	Description			
DbManager CD	Installable DbManager application, technical documents and manuals			
Controller Cable	Management cable. Connects to PacketBand TDM-4 ET'sTerminal port	Cable Spec		
		RJ12		DB9S
		Pin	**Function**	**Pin**
		1	Rx	3
		2	Tx	2
		3	Gnd	5
IEC Mains Cable	Connects PacketBand TDM-4 ET to the mains supply			

2.3. Optional Accessories

The following items can be ordered from Patapsco, or will be supplied with some units depending on the nature of the device.

TDM Cables - Cables to connect the Patapsco device to a CPE or network. Please see the full manual for cable specs on all Patapsco cables

Rack Mounting Kit - All Patapsco units can be monuted in a 19" rack using this kit

SFP Modules and Cables - Please see the PacketBand TDM-4 ET user manual for instructions and precautions to take when using SFP modules

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2.4. Making Connections

First, connect the TDM cables to PacketBand TDM-4 ET followed by the Terminal Port management cable (if required), PKT Port cable and lastly the Mains cable. If the unit has a DC power supply connection, use the screw terminals to connect the DC power source.

Warning: The -48VDC power terminals are marked **0V**, **-48V**, and **GND**. Patapsco -48VDC products are designed for use with negative voltage DC supplies, and therefore expect the positive voltage to be connected to the **0V** terminal, and the negative connected to **-48V**. Please be sure about the polarity of this connection before connecting power to the terminals. Units which have a positive +24VDC power source will be marked **+24VDC**, **0V** and **GND** respectively. Please ensure that the positive connection is made on the **+24VDC** terminal.

2.5. Installing DbManager

DbManager is required in order to monitor and manage Patapsco devices. Management can be made using the Terminal (serial) port, or using TCP/IP over a LAN or WAN. DbManager is installed using the CD provided with Patapsco equipment.

1. Insert the DbManager Installation Disk into the drive of the PC which will be used for management of PacketBand TDM-4 ET.
2. InstallShield Wizard will start up. Follow the steps to install DbManager.
3. Serial Number – Enter the Serial Number on the case of the DbMgr Disk.

Info: DbManager is supplied as a 'Lite' version by default. This allows configuration and monitoring of devices, but only allows configuration of a single device node and a single user account. To use DbManager in 'Lite' mode, do not enter a serial number during installation. Please see the full DbManager User Manual for more information on configuring and using DbManager.

Warning: If an older version of DbManager is already installed on the management PC, it is necessary to update to the version supplied on the new DbManager CD. This can be done by consulting the 'Upgrade' folder on the DbManager CD. The 'readme.txt' file explains how to upgrade to the new DbManager without reinstalling the program.

3. Configuring PacketBand TDM-4 ET

Follow these steps to connect to PacketBand TDM-4 ET with DbManager and configure the unit for use.

Configuration of PacketBand TDM-4 ET is carried out by setting up DbManager to make a management connection, and then setting up the elements of PacketBand TDM-4 ET in this order:

Device Settings -	The unit-specific settings of the PacketBand TDM-4 ET such as the **IP Address** and **Identifier**
Clock Sources -	configure which interface PacketBand TDM-4 ET is to take synchronisation clock from or network, or recovered clock from another PacketBand TDM-4 ET
TDM Ports -	Each TDM port can be individually configured with the correct settings to interface with another device or network
Link Configuration -	Configure settings to carry TDM channels across a PSN between PacketBand TDM-4 ET units
Channel Routing -	Configure routes for the traffic PacketBand TDM-4 ET will pass between connected devices and networks

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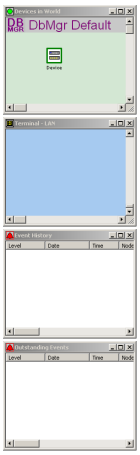
3.1. Connecting to PacketBand TDM-4 ET

1. Start up the DbManager Application
2. Login as **Super User** (no password required)
3. Four windows will be displayed:



Map	A network map showing Nodes and Links between Patapsco devices
Terminal	A view of the communications between DbMgr and PacketBand TDM-4 ET
Event History	All events which occur while connected to PacketBand TDM-4 ET
Outstanding Events	Current events

4. Select **View → Properties → Terminal** from the DbMgr toolbar.
5. Choose the COM port which is in use. Leave the **Serial Port Rate** at the default setting of 19200bps. Click **OK**.
6. Select the **Devices in World** window and double click the **Device** node
7. The **Connected to Device** window should appear, showing the front and rear panels of PacketBand TDM-4 ET. If it does not, check the COM port settings and re-try

Warning: If management via the Terminal port is not possible, it could be that the management PC has another application running which uses the COM ports of the PC. Even when some programs which use the COM ports are closed down, other programs cannot access the COM ports. Rebooting the PC is required in order to release the COM ports so that DbManager can use them.

If the PC and PacketBand TDM-4 ET are connected to the same LAN, management is possible using TCP/IP. All Patapsco products use the default IP settings:

IP Address	192.168.0.1
Subnet Mask	255.255.0.0
Gateway	0.0.0.0

To configure DbManager to access PacketBand TDM-4 ET using TCP/IP, please follow these steps:

1. Select **View → Properties → Terminal → Device IP Addresses** from the DbMgr toolbar
2. 192.168.0.1 should already be configured. If using another IP address, add it to the list using the **Add** button
3. Click **OK → OK**
4. Select the **Devices in World** window and double click the Device node
5. The Connected to Device window should appear, showing the front and rear panels of PacketBand TDM-4 ET

The Device node can be made to connect to other IP addresses configured in the **Device IP Addresses** list by right-clicking the node, selecting **Properties** and choosing an IP address from the **IP List**.

Info: TCP/IP management requires TCP port 3001 (dec) to be open between the management PC and PacketBand TDM-4 ET. Any switches, hubs or routers must be configured to allow communication on this port in order to manage PacketBand TDM-4 ET via TCP/IP.

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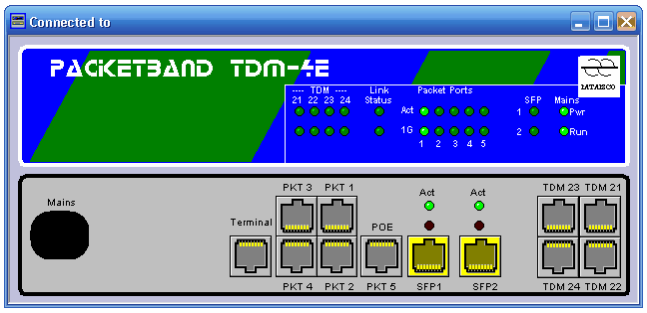
A successful management connection will open up the **Connected to Device** window:



3.2. Notes on configuring PacketBand TDM-4 ET

Uploading

Changes to config can be made on each window and saved using the **OK** key when exiting each window. When happy with the configuration, it must be uploaded to PacketBand TDM-4 ET for the new settings to come into effect.

To upload, go to **File → Upload** and wait until the progress bar completes.

Saving Files

Configuration files can be saved in order to backup settings or copy settings across to another unit. Once configuration has been uploaded, go to **File → Save File** and choose a location to save the file to. The file extension of any saved config files is **.dbc**

Loading Files

Once connected to a unit, an existing configuration file can be loaded to the device. Go to **File → Open File** and navigate to the saved file. Click **Open**. Now the file must be uploaded to PacketBand TDM-4 ET. Go to **File → Upload** and wait until the progress bar completes.

Warning: When loading existing configuration files to a unit, please ensure that the correct configuration files are used for the unit type in use. PacketBand TDM-4 ET configuration files are not compatible with other Patapsco platforms.

3.3. Device Settings

This menu controls unit-specific features of the PacketBand TDM-4 ET such as the IP Address, Identifier, Serial Number, Configuration Number, Time & Date and Event Reporting. These features are all fully explained in the PacketBand TDM-4 ET User Manual on the DbManager Installation Disk.

3.4. Clock Sources

PacketBand TDM-4 ET must be configured to either receive clock from an TDM interface or generate clock internally. Different priorities can be set for each port, so if one port is unavailable, PacketBand TDM-4 ET will clock from the next available port in the Clock Source hierarchy.

1. Select **Clock Sources** from the **Terminal** port menu.
2. Enter a digit to mark the priority of each TDM port and the internal clock. **0** will denote the highest priority Clock Source and **19** will denote the lowest. Ports which are not to be used for clocking can have their values left at 19.
3. Click **OK** to save the setting.

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Warning: Clock Sources must be configured correctly to ensure error-free operation when PacketBand TDM-4 ET is connected to any other clock-locked system or network. Please consult the full PacketBand TDM-4 ET manual if unsure how to configure Clock Sources.

3.5. TDM Ports

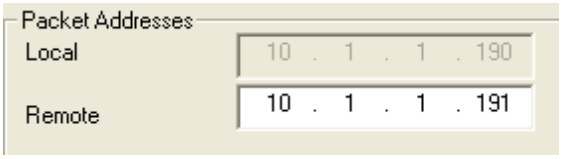
There are two LEDs for each TDM port, and the LED states are as follows:

Top LED on -	Layer 1 and 2 established
Bottom LED on -	Channels active on interface

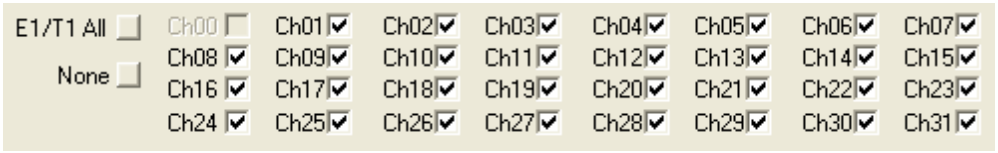
Click on an enabled TDM port.
1. The configuration settings for the port are displayed.
2. Configure the settings as required for the port.
3. Click **OK** to save the settings.

3.6. Link Configuration

The Link Configuration option is used to configure **Logical Links** between PacketBand TDM-4 ET units. Each Logical Link can carry up to 32 TDM channels.



1. Click on **Link Configuration**
2. Select the first Logical Link; **LL101**
3. Tick the **Enable** tickbox
3. Enter the IP address of the remote PacketBand TDM-4 ET
4. Click on **Channel Routing** at the bottom of the Logical Link window
5. Select which E1 or T1 channels the Logical Link is to transport.


E1/T1 All
None
Ch00 Ch01 Ch02 Ch03 Ch04 Ch05 Ch06 Ch07
Ch08 Ch09 Ch10 Ch11 Ch12 Ch13 Ch14 Ch15
Ch16 Ch17 Ch18 Ch19 Ch20 Ch21 Ch22 Ch23
Ch24 Ch25 Ch26 Ch27 Ch28 Ch29 Ch30 Ch31

6. Click **OK**

Note: Each Logical Link can be configured with many settings for transport across a Packet Switched Network. All of these options are described in the PacketBand TDM-4 ET User Manual. The above settings are all that is required to get a Logical Link running initially. A pair of PacketBand TDM-4 ETs working in a system should have identical Logical Link settings in order to pass traffic across a PSN.

3.7. Finishing Configuration

Note: Please remember to **Upload** when configuration of PacketBand TDM-4 ET is complete. To upload, go to **File → Upload** and wait until the progress bar completes.

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3.8. More Resources

All Patapsco products and the DbManager application have their own User Manuals which can be found in the 'Documents & Manuals' folder on the DbManager installation disk. Please consult these manuals for more detailed information on any aspect of using Patapsco products. All documentation can also be obtained by registering at the Patapsco website:

http://www.patapsco.co.uk/Top_Level/LogIn_Register.asp

For help with a specific problem, please click on the **On-Line Help** icon on the website, or email a request to support@patapsco.co.uk

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